

60. *Achillea Millefolium* L. var. *nigrescens* E. Mey. Common on sand-dunes about Newport.
61. *Chrysanthemum maximum* Ramond. Common in cultivation, and frequently escaping to waste places, Salem.
62. *Artemisia Absinthium* L. Occasional in vacant lots, Salem.
63. *Senecio Bolanderi* Gray. On damp cliffs along the beach at Newport. Common in southwestern Oregon.
64. *Micropus californicus* Fisch. & Mey. Abundant on a dry rocky hillside six miles southeast of Salem. Also near Orville, Marion Co. Abundant in southwestern Oregon.
65. *Centaurea Jacea* L. In waste ground on campus of Willamette University, Salem.
66. *Centaurea consimilis* Boreau. In waste ground, Eugene. Also collected on ballast at Linnton.

Thirty-three of the above list, or exactly 50 per cent, are clearly introduced; the other 50 per cent seem to be native.

This list of 66 species, added to the 153 reported in my former article, gives a total of 219 species that find no mention in the latest manual professing to cover this region. About 125 of these, or approximately 57 per cent, may be regarded as introduced. The prediction that the original 1617 species of the Flora of the Northwest Coast could be raised to two thousand by a more thorough survey of the field seems nearer realization than ever; for there is no reason to suppose that the field has been yet exhaustively studied, or that the introduction of foreign species has been checked.

## REVIEWS

### Ferns of Tropical Florida\*

One of the most interesting floristic regions of the United States is the southern tip of Florida, the only portion of our area in which the flora of tropical America is at all largely represented. No botanist knows this region so well as Dr. Small; and his summing up of our knowledge, to date, of even one of the predomi-

\* Small, J. K. Ferns of Tropical Florida. Pp. ix + 80. 5 half-tone plates and 53 text-figures. New York, published by the author. 1918. Price \$1.55.

nantly tropical groups occurring there—the ferns—is a welcome addition to his previous work on that locality. As a local flora should, the book gives, in an introduction, an account—and a very good one—of the geological, physical, and vegetational aspects of the Keys, to which Dr. Small limits “tropical Florida.” There follows a systematic treatment of the 53 species of ferns and fern-allies known to grow there—a treatment abreast of the latest studies, with keys, full descriptions and notes on the mode of growth, habitat, time of discovery in Florida and range elsewhere of each species. These notes are not only interesting in subject-matter, but readable and attractive in style. Five half-tone plates of ferns *in situ*, from photographs by the author, form an excellent supplement to them. Furthermore, each species is illustrated in a text-figure, after the manner made familiar by the Illustrated Flora. There is probably no group of plants in which such illustration is of more value than in the ferns, where the characters necessarily used in the delimitation of species are often hard to describe intelligibly, but easy to picture. And no one could ask for better figures than Miss Mary E. Eaton has furnished—accurate, life-like and, in spite of their small size, beautifully clear in detail. Rarely, text and figures fail to agree. The sporophyll of *Lycopodium adpressum* figured on p. 65, for instance, is certainly not “abruptly subulate from a more or less toothed base”; but here the advantage seems to be with the artist rather than the author. There is also an ample glossary, a list of authors cited and a rather brief index.

Probably no book ever entirely suited its reviewers. From the point of view of the working systematist, amateur or professional, this shows one defect in technique surprising in a taxonomist of Dr. Small's keenness and long experience, and offers some opportunity for a homily on points of wider application than to it alone. The one new species proposed in the book (p. 31) is described in terms so general that anyone, on the evidence of the description alone, would be justified in reducing it to a synonym of *Pteris longifolia*, from which, as hitherto interpreted, it is a segregate. Moreover, the facts that it is such

a segregate and that it includes, as it does, all the Florida material heretofore referred to *Pteris longifolia* are not mentioned at all.

This omission of the synonym is rather typical of much of Dr. Small's work. It would often be more intelligible nomenclatorially if unfamiliar segregates were better correlated with past usage and some reason given for shifts of name. One would like to know, for instance, why the name *Pycnodoria* is applied to the traditional *Pteris* and *Pteris* to *Pteridium*; but no hint of a reason is given.\* The Illustrated Flora, a nomenclatorial pioneer in its field, printed a rather full synonymy and became thereby convincing where it was right and detectably wrong where it erred. In the absence of any adequate explanation, one must either accept the author's conclusions unquestioningly—and no true scientist desires that—or do over again much work which he has already done.

One feature which can go far to make or mar a manual is found in its keys. In this book they are, for the most part, adequate, but betray occasional weaknesses. Take the key to the orders on p. 2, for instance. Anyone unfamiliar with the plants would have his troubles in referring the average specimen to its proper order by such characters as these: "Vernation straight or inclined: prothallium subterranean, yellowish," and "Vernation circinate: prothallium terrestrial or epiphytic, green." They are, to be sure, the outstanding technical characters of the Ophioglossales and Filicales respectively; but a key is a practical device and is not required to furnish general definitions of the groups to which it leads. As it happens, the sole representative of the Ophioglossales among the species concerned is also the only dimorphic fern which has simple fertile segments and reticulate-veined sterile ones. Mention of this fact would have made the key readily workable. Again, on p. 4, "sporangia sessile on a filiform receptacle" and "sporangia borne on normal or modified leaf-blades" make no true contrast. The sporangia are also on leaf-blades in the first case. The principal headings

\* The same is true of Dr. Britton's Flora of Bermuda, where this use of the two names appears, so far as I have observed, for the first time.

in the key to the species of *Tectaria* (p. 45) are based on one character hard to make out and another which is inconstant. As the figure testifies, the basal lobes of *T. minima* are as often as not much smaller than the terminal lobe. The key to these species in the Flora of the Southeastern United States is better; a still better one could be made by utilizing characters of root-stock, shape of areolae and indusium. I have dwelt in some detail on this point, a minor one so far as the present work is concerned, because carelessly made and inaccurate keys constitute a serious defect in a good deal of present-day systematic work. The making of a good and practicable key takes time and labor—more, apparently, than many authors are willing to put into it; but it is time well spent. For not only are good keys a vast aid and comfort to the user of them, but their making clarifies, as perhaps nothing else will, the author's own conceptions of species and groups.

I have ventured on so much of criticism, on somewhat technical lines, because it is of rather broad application. If it has assumed too great a prominence, I am sorry. For Dr. Small's little book, dealing from full knowledge with a region of especial interest, has a very real value to the student of plant distribution; and for fern-lovers who go south, it leaves little to be desired. Their only regret will be that he did not extend it to cover the ferns of all Florida.

C. A. WEATHERBY

**Billy, the Boy Naturalist\***

To those brought up in the city, or worse still in the sophisticated suburbs, the production of a book like this, and the mental vista of its writer back to wholesome outdoor memories is at once a joy and a despair. Few can have such a fragrant memory of youthful pleasures in the simple things of nature, and the loss to our viewpoint, if not in our powers of observation is never quite overcome.

\*Murrill, W. A. *Billy, the Boy Naturalist*, the true story of a naturalist's boyhood in Virginia just after the Civil War. Pp. 1-252 + 48 illustrations. W. A. Murrill, Bronxwood Park, N. Y. City. 1918. Price \$1.50.